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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,979	04/17/2006	Werner Stamm	2003P14050WOUS	8721
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SIEMENS CORPORATION			EXAMINER	
INTELLECTUAL PROPERTY DEPARTMENT			AUSTIN, AARON	
170 WOOD AVENUE SOUTH				
ISELIN, NJ 08830			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/575,979	STAMM, WERNER
	Examiner AARON S. AUSTIN	Art Unit 1784

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 July 2010.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 14-16,18-21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) 24-27 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 14-16,18-21 and 23 is/are rejected.
- 7) Claim(s) 24-27 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 17 April 2006 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/28/10 has been entered.

Claim Objections

Claims 24-27 are objected to because of the following informalities: the claims are not identified as being withdrawn. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation "as claimed in claim 17" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "as claimed in claim 22" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

For purposes of examination, claims 18 is treated as being dependent on claim 14 and claim 23 is treated as being dependent on claim 19.

Claim Rejections - 35 USC § 102 and 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 14 and 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sommer et al. (US 6,280,857).

Sommer et al. teach a coating composition with oxidation resistance comprising 1-8% Re, 11-15% Cr, 18-28% Co, 11.5-14% Al, 0.3-1.3% Y, 0-0.5% La, and the balance nickel. Prior art which teaches a range within, overlapping, or touching the claimed range anticipates if the prior art range does not substantially deviate from the claimed range. *Perricone v. Medicis Pharmaceutical Corp.*, 77 USPQ 1321, 1327 (Fed. Cir. 2005)(anticipation found even where prior art range was not identical to claimed

ranges); see also MPEP 2131.03 and *Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993).

Sommer et al. does not appear to discuss the volume of chromium-rhenium precipitates. However, the volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used and formed in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claim 19, the coating may be applied to a nickel based substrate (column 5, line 36).

Claims 14-16 and 19-21 are rejected under 35 U.S.C. 103(a) as obvious over Czech et al. (US 5,268,238).

Czech et al. teach a coating composition with corrosion and oxidation resistance comprising 1-20% Re, 15-50% Cr, 0-15% Al, 0.3-2% of at least one rare earth, and the balance at least one of iron, nickel, and cobalt.

Regarding the amount of cobalt claimed, Czech et al. do not explicitly specify a range for the cobalt in the taught composition. However, "a remainder primarily being at least one of the elements iron, nickel, and cobalt" provides one of ordinary skill in the art a finite list of variables which mathematically includes the claimed range of 24-26% Co with a remainder nickel. *In the alternative*, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the amount of Co when cobalt and nickel are chosen as the base material for the taught composition for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Motivation to do so is provided by Czech et al. which recognizes that the amount of Co is a result effective variable whose properties are directly related to corrosion resistance whereas the nickel provides ductility (column 2, lines 39-46).

With further regard to the taught ranges, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Czech et al. overlap the instantly claimed proportions and therefore are considered to establish a *prima facie* case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of

percentages", *In re Peterson* 65 USPQ2d 1379 (CAFC 2003).

Also, *In re Geisler* 43 USPQ2d 1365 (Fed. Cir. 1997); *In re Woodruff*, 16 USPQ2d 1934 (CCPA 1976); *In re Malagari*, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding the claimed precipitates, the volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claim 19, the coating may be applied to a nickel based substrate (column 1, line 13).

Claims 14-16 and 19-21 are rejected under 35 U.S.C. 103(a) as obvious over Czech et al. (US 5,273,712).

Czech et al. teach a coating composition with corrosion and oxidation resistance comprising 1-20% Re, 15-50% Cr, 0-15% Al, 0.3-2% of at least one rare earth, and the balance at least one of iron, nickel, and cobalt.

Regarding the amount of cobalt claimed, Czech et al. do not explicitly specify a range for the cobalt in the taught composition. However, "a remainder primarily being at least one of the elements iron, nickel, and cobalt" provides one of ordinary skill in the art a finite list of variables which mathematically includes the claimed range of 24-26% Co with a remainder nickel. *In the alternative*, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the amount of Co when cobalt and nickel are chosen as the base material for the taught composition for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Motivation to do so is provided by Czech et al. which recognizes that the amount of Co is a result effective variable whose properties are directly related to corrosion resistance whereas the nickel provides ductility (column 2, lines 39-46).

With further regard to the taught ranges, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Czech et al. overlap the instantly claimed proportions and therefore are considered to establish a *prima facie* case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of

percentages", *In re Peterson* 65 USPQ2d 1379 (CAFC 2003).

Also, *In re Geisler* 43 USPQ2d 1365 (Fed. Cir. 1997); *In re Woodruff*, 16 USPQ2d 1934 (CCPA 1976); *In re Malagari*, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding the claimed precipitates, the volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claim 19, the coating may be applied to a nickel based substrate (column 1, line 13).

Claims 14-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as obvious over Stamm (WO 99/55527; please see corresponding US Patent No. 6,610,419 for an English translation).

Stamm teaches a coating composition with corrosion and oxidation resistance comprising 0-20% Re, 15-35% Cr, 7-18% Al, 0.3-2% of at least one rare earth, and the balance at least one of iron, nickel, and cobalt.

Regarding the amount of cobalt claimed, Stamm does not explicitly specify a range for the cobalt in the taught composition. However, "As the remainder the MCrAlY alloy contains one or more elements selected from the group consisting of iron, cobalt, and nickel, this being symbolically abbreviated by M" provides one of ordinary skill in the art a finite list of variables which mathematically includes the claimed range of 24-26% Co with a remainder nickel. *In the alternative*, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the amount of Co when cobalt and nickel are chosen as the base material for the taught composition for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With further regard to the taught ranges, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Stamm overlap the instantly claimed proportions and therefore are considered to establish a *prima facie* case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", *In re Peterson* 65 USPQ2d 1379 (CAFC 2003).

Also, *In re Geisler* 43 USPQ2d 1365 (Fed. Cir. 1997); *In re Woodruff*, 16 USPQ2d 1934 (CCPA 1976); *In re Malagari*, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding the claimed precipitates, the volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claims 18 and 23, a thermal barrier coating may be applied to the MCrAlY layer.

Regarding claim 19, the coating may be applied to a nickel based substrate.

Claims 14-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as obvious over Stamm (EP1306454; please see corresponding US Patent Application No. 2003/0207151 for an English translation).

Stamm teaches a coating composition with corrosion and oxidation resistance comprising 0.5-2% Re, 15-21% Cr, 9-11.5% Al, 0.05-.7% of at least one rare earth, and the balance of nickel and/or cobalt.

Regarding the amount of cobalt claimed, Stamm does not explicitly specify a range for the cobalt in the taught composition. However, "a remainder being cobalt and/or nickel" provides one of ordinary skill in the art a finite list of variables which mathematically includes the claimed range of 24-26% Co with a remainder nickel. *In the alternative*, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the amount of Co when cobalt and nickel are chosen as the base material for the taught composition for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With further regard to the taught ranges, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Stamm overlap the instantly claimed proportions and therefore are considered to establish a *prima facie* case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", *In re Peterson* 65 USPQ2d 1379 (CAFC 2003).

Also, *In re Geisler* 43 USPQ2d 1365 (Fed. Cir. 1997); *In re Woodruff*, 16 USPQ2d 1934 (CCPA 1976); *In re Malagari*, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding the claimed precipitates, reduced Cr-Re precipitates are taught (English translation at paragraph [0014]). The volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claims 18 and 23, a thermal barrier coating may be applied to the MCrAlY layer.

Regarding claim 19, the coating may be applied to a nickel based substrate.

Claims 14-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czech et al. (US 5,268,238) in view of Sommer et al. (US 6,280,857).

Czech et al. teach a coating composition with corrosion and oxidation resistance comprising 1-20% Re, 15-50% Cr, 0-15% Al, 0.3-2% of at least one rare earth, and the balance at least one of iron, nickel, and cobalt.

With further regard to the taught ranges, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious

because the compositional proportions taught by Czech et al. overlap the instantly claimed proportions and therefore are considered to establish a *prima facie* case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", *In re Peterson* 65 USPQ2d 1379 (CAFC 2003).

Also, *In re Geisler* 43 USPQ2d 1365 (Fed. Cir. 1997); *In re Woodruff*, 16 USPQ2d 1934 (CCPA 1976); *In re Malagari*, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding claims 14-16 and 19-21, Czech et al. teach a composition that may have a balance of nickel and cobalt which mathematically includes values overlapping the claims as set forth above. However, Czech et al. do not explicitly teach a preferable amount of cobalt as claimed.

Sommer et al. teach a substantially similar MCrAlY type composition for application to turbine components. The coating includes both nickel and cobalt wherein the amount of cobalt is 18-28%. Therefore, as Sommer clearly teaches 18-28% cobalt is suitable in forming a MCrAlY type coating with both nickel and cobalt, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use 18-28% cobalt as the amount of cobalt in the balance of nickel and cobalt taught by Czech et al. Further, the value for cobalt provides a workable range which one of

ordinary skill in the art can use as a starting point when determining the optimum value of this result effective variable as set forth above.

Regarding the claimed precipitates, the volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claims 18 and 23, Czech et al. do not teach application of a thermal barrier coating to the protective MCrAlY type coating composition.

Sommer et al. teach a substantially similar MCrAlY type composition for application to turbine components. The coating are identified as being useful as bond coats for thermal barrier coatings for reduced spallation and increased thermal protection (column 8, lines 1-14). Therefore, as Sommer et al. clearly teaches MCrAlY type alloys are useful as bond coats for thermal barrier coatings for turbine engine components, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the composition of Czech et al. as a bond coat for a thermal barrier coating to further protect the underlying turbine engine component.

Regarding claim 19, the coating may be applied to a nickel based substrate (column 1, line 13).

Claims 14-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czech et al. (US 5,273,712) in view of Sommer et al. (US 6,280,857).

Czech et al. teach a coating composition with corrosion and oxidation resistance comprising 1-20% Re, 15-50% Cr, 0-15% Al, 0.3-2% of at least one rare earth, and the balance at least one of iron, nickel, and cobalt.

With further regard to the taught ranges, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Czech et al. overlap the instantly claimed proportions and therefore are considered to establish a *prima facie* case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", *In re Peterson* 65 USPQ2d 1379 (CAFC 2003).

Also, *In re Geisler* 43 USPQ2d 1365 (Fed. Cir. 1997); *In re Woodruff*, 16 USPQ2d 1934 (CCPA 1976); *In re Malagari*, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding claims 14-16 and 19-21, Czech et al. teach a composition that may have a balance of nickel and cobalt which mathematically includes values overlapping

the claims as set forth above. However, Czech et al. do not explicitly teach a preferable amount of cobalt as claimed.

Sommer et al. teach a substantially similar MCrAlY type composition for application to turbine components. The coating includes both nickel and cobalt wherein the amount of cobalt is 18-28%. Therefore, as Sommer clearly teaches 18-28% cobalt is suitable in forming a MCrAlY type coating with both nickel and cobalt, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use 18-28% cobalt as the amount of cobalt in the balance of nickel and cobalt taught by Czech et al. Further, the value for cobalt provides a workable range which one of ordinary skill in the art can use as a starting point when determining the optimum value of this result effective variable as set forth above.

Regarding the claimed precipitates, the volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

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Sommer et al. teach a substantially similar MCRAIY type composition for application to turbine components. The coating are identified as being useful as bond coats for thermal barrier coatings for reduced spallation and increased thermal protection (column 8, lines 1-14). Therefore, as Sommer et al. clearly teaches MCRAIY type alloys are useful as bond coats for thermal barrier coatings for turbine engine components, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the composition of Czech et al. as a bond coat for a thermal barrier coating to further protect the underlying turbine engine component.

Regarding claim 19, the coating may be applied to a nickel based substrate (column 1, line 13).

Claims 14-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stamm (WO 99/55527; please see corresponding US Patent No. 6,610,419 for an English translation) in view of Sommer et al. (US 6,280,857).

Stamm teaches a MCRAIY type coating composition for turbine components as set forth above.

Regarding claims 14-16 and 19-21, Stamm teaches a composition that may have a balance of nickel and cobalt which mathematically includes values overlapping the claims as set forth above. However, Stamm does not explicitly teach a preferable amount of cobalt as claimed.

Sommer et al. teach a substantially similar MCrAlY type composition for application to turbine components. The coating includes both nickel and cobalt wherein the amount of cobalt is 18-28%. Therefore, as Sommer clearly teaches 18-28% cobalt is suitable in forming a MCrAlY type coating with both nickel and cobalt, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use 18-28% cobalt as the amount of cobalt in the balance of nickel and cobalt taught by Stamm. Further, the value for cobalt provides a workable range which one of ordinary skill in the art can use as a starting point when determining the optimum value of this result effective variable as set forth above.

Regarding the claimed precipitates, the volume of chromium-rhenium precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claims 18 and 23, a thermal barrier coating may be applied to the MCrAlY layer.

Regarding claim 19, the coating may be applied to a nickel based substrate.

Claims 14-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stamm (EP1306454; please see corresponding US Patent Application No. 2003/0207151 for an English translation) in view of Sommer et al. (US 6,280,857).

Stamm teaches a MCrAlY type coating composition for turbine components as set forth above.

Regarding claims 14-16 and 19-21, Stamm teaches a composition that may have a balance of nickel and cobalt which mathematically includes values overlapping the claims as set forth above. However, Stamm does not explicitly teach a preferable amount of cobalt as claimed.

Sommer et al. teach a substantially similar MCrAlY type composition for application to turbine components. The coating includes both nickel and cobalt wherein the amount of cobalt is 18-28%. Therefore, as Sommer clearly teaches 18-28% cobalt is suitable in forming a MCrAlY type coating with both nickel and cobalt, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use 18-28% cobalt as the amount of cobalt in the balance of nickel and cobalt taught by Stamm. Further, the value for cobalt provides a workable range which one of ordinary skill in the art can use as a starting point when determining the optimum value of this result effective variable as set forth above.

Regarding the claimed precipitates, reduced Cr-Re precipitates are taught (English translation at paragraph [0014]). The volume of chromium-rhenium

precipitates is not specifically taught. However, as like materials are used in a like manner in overlapping amounts, the volume of precipitates formed is expected to be as claimed. More particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Regarding claims 18 and 23, a thermal barrier coating may be applied to the MCrAlY layer.

Regarding claim 19, the coating may be applied to a nickel based substrate.

Response to Arguments

Applicant's arguments filed 7/19/10 have been fully considered but they are not persuasive.

In particular, with respect to the rejection under 35 USC 102(b) over Sommer et al. (US 6,280,857), Applicant argued that the newly added limitations to claims 14 and 19 overcame the rejection. However, upon further consideration of the description of the chromium-rhenium precipitates in the present specification, the rejection was amended to suggest the limitation of the precipitates will inherently be as claimed. More

particularly, the present specification suggests that the claimed protective layer is not process dependent (specification at page 7(a)). To the contrary the protective layer, including the limitation on the precipitate formation, as claimed appears to be compositionally dependent (specification at pages 7-7(a)). Therefore, as the composition claimed overlaps those taught in the references as set forth above, the claimed limitation on precipitates is expected in the product set forth in the rejection at least where the compositions overlap.

Second, Applicant did not address the rejections under 35 USC 103(a) over the Stamm references. As such, these rejections are maintained.

Third, Applicant presented arguments suggesting commercial success of the claimed product should overcome the present rejections over the Czech et al. references under 35 USC 103(a).

In support of the argument for commercial success Applicant submitted the Declaration of Dr. Axel Kaiser Under 37 CFR 1.132. The Declaration, and the evidence to which it referred, was considered in evaluating this argument.

In both Applicant's reply and the Declaration the argument suggested the article presently claimed has enjoyed significant sales success well and above the article claimed in the Czech references. However, an applicant who is asserting commercial success to support its contention of nonobviousness bears the burden of proof of establishing a nexus between the claimed invention and evidence of commercial

success. The term "nexus" designates a factually and legally sufficient connection between the evidence of commercial success and the claimed invention so that the evidence is of probative value in the determination of nonobviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 7 USPQ2d 1222 (Fed. Cir. 1988). See MPEP 716.03. In the present case a nexus has not been established as the evidence provided was not tied to the claims such that the commercial success could be judged to be commensurate with the scope of the claims.

Further, the arguments presented did not establish the suggested commercial success was derived from the claimed invention. It was suggested that the improvement in sales was a direct result of the improved performance of the presently claimed article. However, as noted in the prior Office Actions, this argument is in line with an argument based upon unexpected results. The evidence provided in support of this argument is recitation of conclusions within the present specification. This evidence is insufficient in providing a determination of whether the claimed ranges perform with unexpected benefits/results in comparison to coatings wherein the ranges for cobalt and/or rhenium are outside of the claimed range. As such, the argument for unexpected results here and with respect to the other rejections is unconvincing.

Moreover, the sales figures were not adequately defined. Gross sales figures do not show commercial success absent evidence as to market share, *Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985), or as to the time period during which the product was sold, or as to what sales would normally be expected in the market, *Ex parte Standish*, 10 USPQ2d 1454 (Bd. Pat. App. & Inter.

1988). See MPEP 716.03(IV). In the present case, the evidence presented only suggested there was an increase in sales over the previous coatings offered for sale. Nothing in the argument established the increase in sales was directly due to the claimed invention, the actual volume of sales to which it could be determined the sales were significant, or the nature of the market for these goods.

For the reasons listed above the argument suggesting the commercial success of the claimed product should be used to overcome the present rejections over the Czech references is unconvincing. The rejections are therefore maintained as set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON S. AUSTIN whose telephone number is (571)272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron S Austin/
Primary Examiner, Art Unit 1784